

## CLAIMS

1. A transdermal formulation for external application comprising a non-steroidal anti-inflammatory analgesic, an alkyl ester of gallic acid, and a phenolic radical scavenger having a branched-chain lower alkyl group.

2. The transdermal formulation for external application according to claim 1, wherein said phenolic radical scavenger is at least one selected from the group consisting of *tert*-butylhydroxyanisole, di-*tert*-butylhydroxytoluene and thymol.

3. The transdermal formulation for external application according to claim 1 or 2, wherein said alkyl ester of gallic acid is an ester of gallic acid and a lower alcohol.

4. The transdermal formulation for external application according to any one of claims 1 to 3, wherein said non-steroidal anti-inflammatory analgesic is at least one selected from the group consisting of ketoprofen, tiaprofen, suprofen, tolmetin, carprofen, benoxaprofen, piroxicam, benzydamine, naproxen, diclofenac, ibuprofen, diflunisal and azapropazone.

5. An interleukin-1 $\alpha$  production inhibitor consisting of a phenolic radical scavenger having a branched-chain lower alkyl group, and/or an alkyl ester of gallic acid.

6. The interleukin-1 $\alpha$  production inhibitor according to claim 5, wherein said phenolic radical scavenger is at least one selected from the group consisting of *tert*-butylhydroxyanisole, di-*tert*-butylhydroxytoluene and thymol.

7. The interleukin-1 $\alpha$  production inhibitor according to

claim 5 or 6, wherein said alkyl ester of gallic acid is an ester of gallic acid and a lower alcohol.

8. The interleukin-1 $\alpha$  production inhibitor according to any one of claims 5 to 7, which is used as a component in a transdermal formulation for external application comprising a non-steroidal anti-inflammatory analgesic.

9. The interleukin-1 $\alpha$  production inhibitor according to claim 8, wherein said non-steroidal anti-inflammatory analgesic is at least one selected from the group consisting of ketoprofen, tiaprofen, suprofen, tolmetin, carprofen, benoxaprofen, piroxicam, benzydamine, naproxen, diclofenac, ibuprofen, diflunisal and azapropazone.

10. A transdermal formulation for external application comprising the interleukin-1 $\alpha$  production inhibitor according to any one of claims 5 to 9 and a non-steroidal anti-inflammatory analgesic.

11. The transdermal formulation for external application according to claim 10, wherein said non-steroidal anti-inflammatory analgesic is at least one selected from the group consisting of ketoprofen, tiaprofen, suprofen, tolmetin, carprofen, benoxaprofen, piroxicam, benzydamine, naproxen, diclofenac, ibuprofen, diflunisal and azapropazone.

12. Use of the following substance (a) and/or substance (b) for inhibition of interleukin-1 $\alpha$  production.

(a) A phenolic radical scavenger having a branched-chain lower alkyl group

(b) An alkyl ester of gallic acid

13. Use of the following substance (a) and/or substance (b)

as a component in a transdermal formulation for external application comprising a non-steroidal anti-inflammatory analgesic.

(a) A phenolic radical scavenger having a branched-chain lower alkyl group

5 (b) An alkyl ester of gallic acid